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SFUND RECORDS CTR
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July 17, 2008

Rick Cooper
Hollister Field Manager
Bureau of Land Management
20 Hamilton Court
Hollister, CA 95023

Dear Mr. Cooper:

In March, you provided EPA with BLM's comments on the draft Clear Creek Management Area Asbestos Exposure and Risk Assessment. We were able to incorporate many of the Bureau's comments and believe that they made the final report a stronger and more readily understood document.

Enclosed is our response to your comments. Please contact me if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Jerelean M. Johnson".

Jerelean M. Johnson
Remedial Project Manager

enclosure

HOLLISTER FIELD OFFICE COMMENTS:

SECTION 1

Comment 1:

Section 1. Second paragraph, where it says "a 31,000 acre outcrop of naturally occurring chrysotile asbestos".

Recommendation 1:

Remove chrysotile because CCMA asbestos is not limited to this type.

EPA Response: Recommendation adopted.

Comment 2:

Section 1. Third and fourth paragraph mischaracterize RMP history and schedule.

Recommendation 2:

BLM suggests using the following language to describe RMP history/schedule:

"BLM's current management direction for CCMA is contained in the 1984 Hollister Resource Management Plan (RMP) and the Record of Decision (ROD) for CCMA RMP Amendment and Route Designation (2006). The Hollister RMP was updated in 2007 to re-establish goals, objectives, and management actions for BLM public lands that address current issues, knowledge, and conditions. However, the CCMA was not addressed in that document because EPA was preparing this risk assessment to provide further information on airborne asbestos emissions and the associated health risks from various types of activities in the CCMA.

If the results of the EPA risk assessment were significant, BLM agreed to expeditiously initiate a National Environmental Policy Act (NEPA) review to consider the new information and potential management responses at the CCMA. BLM and EPA agreed that this subsequent NEPA review would address general public access and recreation at the CCMA. Therefore, BLM published the "Notice of Intent to Prepare the CCMA RMP/EIS" on September 6, 2007. The purpose and need for the CCMA RMP/EIS is to incorporate the results of this risk assessment and analyze a full range of alternatives to minimize and reduce the human health risk from exposure to asbestos at CCMA. BLM will complete public scoping for the CCMA RMP/EIS approximately 45 days after the public release of this risk assessment and expects to complete the RMP/EIS process in 2009."

EPA Response: Recommendation adopted.

SECTION 2

Comment 3:

Section 2. Narrative does not explain why the 1992 health risk assessment needs to be updated except for reference to "current asbestos sampling and analytical techniques" (i.e. TEM).

Also, "goal of EPA exposure and risk assessment" should refer to the need for EPA to provide BLM with a statement of the levels of acceptable risk and excess lifetime cancer risk for activities in CCMA. (See BLM Comment #13 re: term "health protective determinations" on page 28 of the EPA report.)

EPA Response: Recommendation adopted.

Recommendation 3:

Refer to other sections of the report for an explanation of the need to update the '92 health risk assessment (i.e. section 6.1 .8).

Section 1 identifies the Atlas ROD decision to work with BLM to determine if RMPs provide adequate protection of public health from exposure to asbestos. Therefore, it would be appropriate to identify (consistent with purpose and need statement) the goal to provide BLM with a statement re: acceptable risk and excess lifetime cancer risk for activities in CCMA.

EPA Response: Recommendation adopted.

SECTION 3

Comment 4:

Section 3. Third paragraph states "the serpentine deposits within the vicinity of the *Area* are the only known locations of..." Please clarify reference to *Area*.

Section 3. Third paragraph identifies BLM protection measures for CAFE, which also includes "designation of routes and barrens open for OHV use in 2007."

Section 3. Fourth paragraph; reference to "multi-use activities at CCMA" and "50,000" annual visitors need to be revised. Also, suggest rewording sentence re: "variety of environments and riding challenges".

Recommendation 4:

Section 3. Third paragraph; BLM suggests replacing '*Area*' with 'CCMA' because known locations of San Benito evening-primrose exist outside the Serpentine ACEC.

Section 3. Third paragraph; BLM suggests replacing "and instituted a number of administrative controls" with "and designated routes and barrens open for OHV use in 2007 to protect public land resources."

Section 3. Fourth paragraph; BLM annual visitor use in CCMA is approximately 35,000. Suggest use of the term "botanical research" instead of "botany" as an existing use; and replacing "variety of environments" with "variety of riding opportunities and challenges".

EPA Response: Recommendation adopted.

SECTION 4

Comment 5:

Section 4.1 .5. Report states "the analysis was performed per ISO 10312, with the following specifications:"

Recommendation 5:

Need to explain why specifications were necessary because these changes contribute to a higher estimate of risk than would be expected without the specifications identified in the report.

EPA Response: An explanation was added. The specifications were necessary to assure that the analyses recorded the fiber size most closely associated with health outcomes.

SECTION 5

Comment 6:

Section 5.2.1.1. Typo in the second to last sentence.

Recommendation 6:

Delete the word "is".

EPA Response: Recommendation adopted.

Comment 7:

Section 5.3. Third paragraph. Where EPA provides a definition for the acceptable risk range, BLM requests clarification on the level of concern that *may* and/or *will* require action; and to what levels PLM would be required to reduce the exposure and resulting risk (i.e. 1 x 0.0001)?

Recommendation 7:

Please identify the legislative authority (i.e. CERCLA, CAA) and/or EPA policy (Superfund program) that states "exposures which are calculated to cause more than 1 in 10,000 excess cancers are considered to be of concern and may require action".

EPA Response: Recommendation adopted.

SECTION 6

Comment 8:

Section 6.1.3. Last sentence. Suggest adding more information on the special concerns regarding the risk of exposure to asbestos for children because of the amount of family recreation associated with OHV use in CCMA.

Recommendation 8:

Suggest including discussion of the health risk associated with exposure during early stages of respiratory development and other concerns unique to children.

EPA Response: Recommendation adopted.

Comment 9:

Section 6.1.5. Last sentence describes "an emerging consensus... that amphiboles may present a greater health risk." Public comments will reflect (warrant a discussion of) the body of knowledge that is increasing with regard to toxicity of chrysotile versus amphibole forms of asbestos.

Recommendation 9:

Suggest referring to the reader to Section 6.2.2 for more information on toxicity parameters, and/or identify statutes that mandate government agencies regulate all forms of asbestos under the same authority.

EPA Response: A citation was provided in the final section 6.5 regarding the health risk of amphiboles and the information in section 7 on toxicity parameters was revised. There are no statutes that mandate that all forms of asbestos be regulated under the same authority.

[No comment 10]

Comment 11:

Section 6.1.8. This section describes the difference between results of studies, but doesn't explain *why* the new report is more accurate/precise, and/or why the 1992 PTI report was considered inadequate based on current sampling and analytical techniques (i.e. PCM vs. TEM analysis).

Recommendation 11:

Refer to (or re-iterate) EPA comments and concerns regarding the adequacy of the 1992 PTI report raised during the BLM route designation process. Include a discussion of the difference between PCM and TEM analysis.

EPA Response: Additional language was added to section 6.8 to discuss the difference between PCM and TEM analysis.

Comment 12:

Section 6.2. This section describes a combination of uncertainties (i.e. recreational vs. occupational exposure; lack of consensus on a causative form or dimension most correlated with asbestos disease) that warrant a definition and/or discussion of naturally occurring asbestos (NOA).

Section 6.2 also needs to address uncertainties regarding PCM and TEM analysis (ref; Atlas ROD, Appendix 1), and PCME (if possible).

Recommendation 12:

Please expand on the discussion of naturally occurring asbestos on page 26 of the report where EPA identifies uncertainty regarding NOA "that exists in various forms and weathering states".

Reference Appendix 1 of the Atlas ROD for uncertainties regarding current sampling and analytical techniques. A discussion of uncertainty regarding phase contrast microscopy equivalent may be necessary to minimize and reduce public comments and/or confusion about assumptions used to derive the PCME.

EPA Response: The uncertainty section was expanded and re-organized to make the information more clear.

Comment 13:

Section 6.2 .2. Page 25. The last two paragraphs on page 25 make clear that “no distinction in toxicity due to mineralogy” was considered during risk calculations, and that “there is no consensus on the exact causative form or dimension is most correlated with asbestos disease”. See comment above on Section 6.1.5.

Page 27. This section (6.2.2) concludes the report and presents a significant amount of information that may be improved structurally by adding additional subheadings to help the reader locate specific interests (i.e. link between toxicity and age).

Page 28. The term "health protective determinations" appears for the first time at the end of the report. Because of its use to sum up the uncertainties, BLM request that EPA clarify what "health protective" means, and perhaps insert the term and/or definition upfront in section 2 as part of the goals of the EPA exposure and risk assessment (i.e. to provide health protective determinations for BLM to consider in preparation of resource management plan for CCMA).

Recommendation 13:

Page 25. In order to reduce confusion/opposition to these statements, EPA may need to include more supporting information/arguments. For example, identify the authority (CERCLA/Superfund, etc.) that provide guidance for addressing different forms of asbestos; and/or mention that “recent rulings by the Ninth Circuit Court of Appeals (US v. Grace Co.) support EPA policy (and US Department of Justice arguments) that all forms of asbestos are harmful to public health and safety. Therefore, the risk calculation made no distinction in toxicity due to mineralogy”, etc.

Page 27. Suggest subheadings: 6.2.2.1 Mineralogy and Morphology, 6.2.2.2 Risk Calculations, 6.2.2.3 Age.

Page 28. If the term "health protective determinations" is associated with (or interchangeable with) the term "acceptable risk range" identified in section 5.3 and 6.1.7, please clarify. BLM and EPA can work together as cooperating agencies to evaluate health protective determinations for BLM to consider during preparation of the CCMA RMP/EIS.

EPA Response: The uncertainty section was expanded and re-organized to make the information more clear.

DENVER NATIONAL OPERATIONS CENTER COMMENTS:

Risk Assessment Methodology

1. From discussions with analytical microscopists who perform both the NIOSH 7400 and the 7402 methods, they find a close relationship between fiber counts using these two methods. Does EPA have an explanation for the wide difference between historical PCM results and the PCME results? Does EPA feel it was due to the analytical method or the

field sampling variables such as moisture conditions, activities, etc? (ref; HFO Comment 12)

EPA Response: EPA addressed the comment in section 6.8 of the final report, which concludes:

Some of the difference in the BLM and EPA sample results is probably attributable to the differences in the PCM and TEM analytical methods and the rules that each method employs for counting asbestos structures. PCM uses an optical microscope which magnifies the sample approximately 450 times. TEM uses an electron microscope that can magnify the sample 10,000 to 20,000 times or more. The greater magnification means that the TEM method can see asbestos structures much thinner than the 0.25 micron diameter visible by PCM and can see structures more clearly on a filter from a dusty environment. TEM can also determine whether a structure seen on the filter is actually asbestos and what type. In addition, the counting rules for PCM and TEM are different. The ISO 10312 TEM method has stringent counting rules that state, for example, that individual discernable fibers which are part of an attached group be counted individually, whereas the PCM methods would count the group as one structure. So, even when the results of TEM analysis are sorted for the PCME fiber size criteria, TEM may report more fibers. Hwang et al compared analytical methods and reported a correlation coefficient between direct TEM methods and PCM methods of 0.87 with values 3 to 15 times higher for TEM.

It should also be remembered that the TEM results reported by EPA are consistent with the earlier CCMA work done by Popendorf and Wenk and sampling at CCMA conducted by the EPA Office of Air Quality Planning and Standards in 1981.

Hwang, C-Y and Wang, Z.M, *Comparison of Methods of Assessing Asbestos Fiber Concentrations*, Archives of Environmental Health, Vol 38, 5-10, 1983

2. EPA uses similar activity-based sampling as has been performed previously at the CCMA. The major difference in this report is the use of a different analytical method TEM (ISO 10312). Neither laboratory nor it's certifications were identified. Conversations with experts and even this report suggests that TEM reports higher concentrations than does PCM. Does EPA have comparable datasets to show have the two different methods compare? The IRIS cancer slope factor is probably based on PCM, so use of TEM may overestimate risk.

EPA Response: The EPA air samples were analyzed by EMSL Analytical, a participant in the National Voluntary Laboratory Accreditation Program of the National Institute of Standards and Technology. As discussed above, TEM can see fibers of much smaller dimension than those seen with PCM. EPA only used the PCM equivalent (PCME) fibers counted on the CCMA air filters in the risk assessment. This is standard practice for EPA risk assessments at asbestos sites using activity-based sampling. While we did not do PCM analysis of the CCMA samples, it is generally expected that the ratios of fibers detected using PCM and TEM are highly variable and site-specific.

3. When looking at the sampling data from a previous draft in table A1, the measured value is below the "limit of detection". How is this possible?

EPA Response: What is reported at the "detection limit" is the 95% upper confidence interval of the Poisson distribution of the sensitivity with no fibers detected. That is, three times the sensitivity. The sensitivity as defined in the ISO 10312 procedures is dependent on the total area of the filter, the proportion of that area analyzed, and the volume of air passed through the filter. This is not a "detection limit" as would be presented for a quantitative analysis of a constituent in a medium. Once there are fiber counts, the upper end confidence level becomes meaningless.

Dry Season vs, Wet Season Sampling Results

4. Data seems to be skewed toward the dry months. Of the 454 samples all but 29 samples were taken during the dry season closure when employees are not routinely on-site. Fence building data was only collected on one occasion in the dry season when employees are typically not working on-site.

Recommendation: BLM requests EPA analyze a subset of "moist" and "wet" season samples *only* (i.e. exclude September samples) to improve characterization of health risk during the OHV Use Season.

EPA Response: When we began our sampling, the dry season closure did not exist. It was started in response to the September 2004 EPA sampling data. Prior to that time, employees were routinely on-site during the summer months.

As Table 1 (attached) shows, 180 of the 457 samples collected by EPA were collected during the current open season. Of the 256 samples analyzed, 129 or 50%, were samples from the open season.

EPA did do an analysis of the moist and wet samples compared to the entire data set. The analysis is attached as Table 2. As you can see, only camping and hiking had winter mean levels significantly below those of the sample set as a whole.

5. The data quality objectives were not identified for the risk assessment. If the sampling had been correlated to soil moisture levels, it would have been more beneficial than just precipitation. For example, the November 4 period designated by EPA as "moist" had greater asbestos concentrations than some "dry" periods.

EPA Response: The soil moisture data was not included in the draft risk assessment reviewed by BLM. In the final assessment, soil moisture data are presented in Appendix F. The soil moisture data generally correlate to the generic descriptors selected by EPA for presentation of the data (dry, moist, wet) but more detailed analysis of the relationship of soil moisture to asbestos air concentration was not performed. The soil moisture samples represent the moisture at a discrete geographic location while the air samples were collected by riding over a wide area of differing soil types and microclimates.

6. Are the precipitation data shown in Figure 2 from the onsite met station?

EPA Response: The precipitation data came from three California Department of Water Resources stations in the CCMA area: Hernandez (HDR), Santa Rita (SRI), and Idria (IDR).

7. Soil sampling is mentioned on page 9, but the Appendix F was not provided. Where did the samplers ride and how do asbestos concentrations correlate to soil samples? Did they ride in areas of lesser asbestos concentrations or just high areas? Page 24 indicates this as a possible source of uncertainty.

Note: This comment and others illustrate the need for all assumptions and uncertainties to be described in the report.

EPA Response: The information on soil sample collection is contained in Section 4.2 of the report and the results are given in Appendix F.

8. Inspection of Figure 4 shows the skewed distributions for the moist condition ATV rider and SUV rider. Most measurements were in the <0.25 fibers/cc range, but there are several values 4-5 times higher than the majority of the samples. These were trailing riders. Were there only two riders to have a lead and a trailer? Were they all riding at the same time and place? Why didn't this condition show for motorcycle riders? Figure 5 shows a similar but less striking pattern, showing a significant bimodal distribution between lead and trailing child riders. Some other potentially useful variables important to BLM are the following distance, number of riders, speed, etc.

EPA Response: Appendix B of the final report contains information on trailing and leading riding, spacing, and other sampling conditions. Sampling events had both lead and one or more trailing riders. The riders followed the same route at the same time. Increased asbestos concentrations were found in the samples for trailing motorcycle, ATV, and SUV drivers/riders.

9. Were the SUV driver/riders actively on trails/hillsides or just on the main road?

EPA Response: SUV driving was only on the main road as shown in Figure 1 of the final report.

BLM Employee Exposure

10. Page 16, High Estimate of 200 days per year. This seems unreasonable since the CCMA is closed much of the year in the dry season.

Recommendation: BLM requests EPA modify the high exposure and low exposure estimates for 'BLM Worker Scenarios' to 120 days and 60 days, respectively.

EPA Response: Recommendation adopted. The original 200 day per year exposure was conducted at the request of BLM. In the final report, the exposure was changed to 60 and 120 days.

11. Using the mean for all dirt bike data in estimating employee risk for motorcycle riding by LE officers assumes the rider will be the trailing bike (mid or tail) 2/3 of the exposure time. From discussions with the employees, this is not the case.

Recommendation: BLM requests EPA analyze motorcycle riding by LE officers as LEAD ONLY to improve characterization of the health risk. Also suggest replacing title of "BLM employee" scenarios with something that describes the type of activity rather than who is conducting the activity.

EPA Response: Recommendation adopted.

12. Since BLM has actual full shift data on the employees, NSTC proposes that BLM use the ongoing full shift data in calculating employee risk.

Note: As cooperating agencies, BLM and EPA need to determine if this would be appropriate. This can be done by BLM (in the RMP/EIS) and can give an ongoing risk calculation based on the actual employee exposure data.

EPA Response: This work will be done by BLM.

Risk Calculations & UCL

13. Table E1, page 8 of 297: "Unit risk factor should not be used if the concentration exceed $4e-2$ ". We need an explanation of why this unit risk factor should not be used and why it is used in this report.

EPA Response: Information regarding the limitations of using the risk factor for concentrations above 10^{-2} is included in the final report and is specifically discussed in section 7.2.5 Limits of Models.

14. Should be some discussion in the report on the short sampling time periods. I estimated from the data from a previous draft that the sample times were typically around 60 minutes. Sampling time seems to be short compared to the time that is being used in the risk calculations. I would have more confidence in the data if the sampling times were closer to the duration of the activities.

EPA Response: EPA believes that the sampling periods were sufficient to provide a representative sample. The most important factor was the geographical representativeness of each sampling activity. The sampling periods provided enough air flow to assure that the analytical sensitivities were appropriate for the activity samples.

15. Data validation of the useability of the results was not provided. Appendix C referred to on page 7 was not provided. What did the blanks show?

EPA Response: The blanks were ND for asbestos fibers. While some information on laboratory QA/QC and data management is found in the final report in Appendix D, additional information is being compiled and will be transmitted to BLM when it is completed.

16. Page 10 and computation of means and 95% UCL. It is understood that EPA guidance has a preference for arithmetic means and 95% UCL, however, the limited information available to me suggests the data are probably log-normally distributed. If true, the arithmetic mean and 95% UCL may overestimate the true concentrations. I would like to see the distributions evaluated and, if appropriate, log means and log UCLs using the Land H method used.

EPA Response: Tables G-1 to G-5 of the final report contain information on the evaluation of the data distribution and the appropriate distribution used to calculate the UCL for each data set.